

a nitride liner recessed within said trench and the nitride liner forming a partially enclosed volume, said partially enclosed volume being completely filled with a dielectric material which also completely fills the trench; [, such that an uppermost surface of said nitride liner is disposed below a transistor channel depth of a transistor disposed in a well beside said shallow trench isolation structure;]

an uppermost surface of said nitride liner being disposed (just below) a transistor channel depth, D_c, of a transistor disposed in a well beside said shallow trench isolation structure, the recessed nitride liner being dimensioned and configured to prevent hot carrier effects due to charge trapping for charge which traverses a channel of the transistor;

the dielectric material including an oxide disposed above said nitride liner such that said oxide extends above the uppermost surface of said nitride liner to substantially a top surface of said substrate, such that substantially no polysilicon material is disposed within the trench.

24. (Amended) A shallow trench isolation structure for preventing hot carrier effects due to charge trapping, said shallow trench isolation structure comprising:

a trench in the substrate;

an oxide liner formed lining the trench and a top surface of the substrate;

[a nitride liner recessed within said trench such that an uppermost surface of said nitride liner is below a channel depth, said channel depth being representative of a depth of a channel associated with a device disposed beside said trench, the nitride liner being below the channel depth prevents charge trapping in the shallow trench isolation structure due to the channel;]

a nitride liner recessed within said trench and the nitride liner forming a partially enclosed volume, said partially enclosed volume being completely filled with a dielectric material which also completely fills the trench;

an uppermost surface of said nitride liner being disposed (just below) a transistor channel depth, D_c, of a transistor disposed in a well beside said shallow trench isolation structure.